

# PROGRESS OF MEDICAL SCIENCE

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## MEDICINE

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UNDER THE CHARGE OF

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**On the Clinical Evidence of Involvement of the Suprarenal Glands in Influenza and Influenzal Pneumonia.**—COWIE and BEAVEN (*Arch. Int. Med.*, 1919, xxiv, 78) were impressed by the fact that the most striking and most constant symptoms of influenza (asthenia, prostration and low blood-pressure) are also the cardinal symptoms of adrenal disfunction. Other symptoms common to acute suprarenal insufficiency and influenza are nausea, vomiting, epigastric and appendicular pains, pains in the back and tenderness on pressure over the back muscles. The question which arose was: Is there a causal relation between adrenal disfunction and the characteristic symptoms of influenza. The evidence on which the authors base their answer may be summarized as follows: Pathological: Of 70 necropsies on patients dead of influenza 6 showed hypoplasia and 1 atrophy of the adrenal bodies. Tests for suprarenal deficiency: Blood-pressure determinations were made on 25 members of the S. A. T. C. In the 20 uncomplicated cases the average systolic blood-pressure was 115 mm. Hg.; in the 5 pneumonias it was 99. These results are useful only in view of the ages of the patients (twenty to forty), for in typical adrenal insufficiency much lower blood-pressures are the rule. In suprarenal insufficiency, but not in health, there is a rise in blood-pressure after prolonged administration of epinephrin. In influenzal pneumonia a similar rise follows the intravenous injection of 10 mg. of adrenalin four times a day for three successive days. In one case the effect was quite marked, the blood-pressure rising from 119 to 131. In suprarenal insufficiency the

intramuscular injection of 1 mg. of epinephrin causes a rise in blood-pressure which may or may not be greater than in the normal individual, but which is always maintained for a longer period. In influenza, whether complicated by pneumonia or not the rise may be sustained for as long as seven hours instead of the normal one or two. Tests for endocrin disfunction: A common but not invariable feature of certain endocrin diseases is hypoglycemia. In influenza, complicated or uncomplicated, the blood sugar was always within the normal limits. In endocrin disfunction the intramuscular injection of 1 mg. of epinephrin causes a rise in blood sugar which persists for more than the normal hour or two. In influenza and influenzal pneumonia the increase in blood sugar may last for more than seven hours. In endocrin disturbances the ingestion of glucose, 1.75 gm. per kilo of body weight, causes an increase in blood sugar, which does not reach normal for three or four hours, while in normal individuals it returns in two hours. In influenza the blood sugar did not reach the normal within three hours, but did at the end of the fifth. There thus seems to be good evidence for the assumption that the asthenia, prostration and low blood-pressure of influenza and influenzal pneumonia are related to suprarenal disfunction. If such be the case the rational treatment of influenza is the administration of epinephrin. A series of cases received 10 or 15 minims of adrenalin intramuscularly every four hours four times a day. Almost invariably symptoms of epinephrin intoxication appeared—palpitation, nervousness, headache, increased lassitude, twitching, rise in temperature and increase in rate of pulse and breathing. The treatment was therefore abandoned and the conclusion reached that the intramuscular injection of epinephrin was of little, if any, benefit in influenza. According to the authors the explanation of the failure of treatment is to be sought not in the epinephrin *per se* but in the method of administration, and the problem which awaits solution is the discovery of the proper method of administering epinephrin.

**The Uric Acid Content of the Blood Compared with the Renal Dietary Test.**—BAUMANN and his collaborators (*Arch. Int. Med.*, 1919, xxiv, 70) report the results of 180 renal dietary tests and blood analyses made chiefly on patients suffering from arteriosclerosis and nephritis. During the dietary tests the patients were kept in bed and were given a uniform quantity of food and water. The Mosenthal modification of the Hedinger and Schleyer diet was generally used. The urine was collected in two-hour periods from 8 A.M. to 8 P.M. and in one period of from 8 P.M. to 8 A.M. The blood for analysis was taken before breakfast. One hundred cases with the clinical symptoms of renal involvement showed slight or moderate abnormality in the blood analysis and dietary tests. Sixty-six had an abnormality of the dietary test, while 74 per cent. showed an increased concentration of uric acid in the blood. The authors believe that the uric acid concentration is a delicate, if not the most delicate index of renal function at our disposal. It is certainly better than the urea test and is probably more delicate than the dietary test, which heretofore has been regarded as the most sensitive. A comparison of the results of the bland and low protein with the high protein and salt diet shows that with the bland, salt-poor diet the specific gravity of the night urine tends to be low and with the regular

diet the volume of the night urine is increased in those cases showing fixed specific gravity. It would appear, therefore, that these diets may be used interchangeably, but the bland diet has the advantage of being easily prepared and may be used if the protein diets are undesirable.

**A Plea for the Early Administration of Atropin in Pneumonia.**—STERLING (*New York Med. Jour.*, August 9, 1919, p. 237) concludes from his clinical experiments that all pneumonia patients should be atropinized from the moment they are first seen by the physician and that all influenza patients, in the present epidemic at least, should be treated as pneumonia patients. His advice may be summed up as give enough atropin and give it early.

**Chronic Amebic Dysentery and Emetin-and-Bismuth Iodide.**—The conclusions of CARLES (*Am. Jour. Clin. Med.*, July, 1919, p. 470) are as follows: (1) The hydrochloride of emetin, while marvellous in the treatment of acute amebic dysentery, has little influence in chronic amebiasis. (2) The remedy of choice in chronic amebiasis is the double iodide of emetin and bismuth. It is given for twelve days in doses of 0.18 gm. daily in divided doses. Its use is attended by the same dangers as those of emetin and calls for the same precautions. (3) In simple chronic amebiasis apparent cure is the rule; however, if the amebiasis is complicated by infection with trichomonas, tetramitus, and especially lamblia, a cure is the exception. The same is frequently true if there are present in the intestine large numbers of trichocephales, ascaris, etc. (4) In such cases the iodide of emetin and bismuth will have no effect unless the patients first are relieved of the parasites. This is simple except in the case of lamblia, the resistance of which to every known remedy is sometimes extreme. (5) It is always necessary to treat properly any coëxisting gastro-intestinal secretory insufficiency or any gastroneurosis or enteritis resulting from fermentation. To depend solely upon the specific treatment may result in failure or in uncertain cure. (6) Chronic dysentery being a chronic malady requires chronic treatment. In spite of the fact that recovery often appears to be complete the successive treatments with the double iodide of emetin and bismuth must be rigidly carried out as a matter of routine.

## SURGERY

UNDER THE CHARGE OF

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**Resection of the Cecum and Ascending Colon.**—HORSLEY (*Annals of Surgery*, 1919, lxi, 25) says that when surgeons began to use the needle and thread for uniting intestine instead of mechanical appliances,

lateral anastomosis was much in vogue. Fifteen years ago, when this transition was occurring, probably the majority of all intestinal resections was followed by a lateral anastomosis, particularly if the colon was involved. At present the opposite is true, and even in the large bowel the end-to-end or axial union is becoming popular. Cannon and Murphy, after roentgen examination of animals in which end-to-end and lateral anastomosis had been done, found that there was not the "slightest evidence of stasis of the food in the region of the operation" with an end-to-end method. On the other hand, peristalsis was apparently abolished in the region of a lateral anastomosis, the fecal contents being pushed through the anastomosis only when a column of it extended into the unaffected proximal (oral) loop of bowel where peristalsis was unimpaired. The reasons for this are that the opening is not in the axis of the bowel, the severed circular fibers cannot act upon the bowel contents satisfactorily and there are two blind pouches in which the feces tend to collect. The proximal (oral) intestinal pouch is emptied with great difficulty. Lateral anastomosis is made in the direction of the long muscle of the bowel, and these external longitudinal fibers are split instead of being cut across as in the end-to-end method. Contraction of these fibers tends to close the opening in the bowel and a very long lateral anastomosis has to be made to prevent too much contraction. It requires much more bowel to make a lateral anastomosis than an end-to-end. The objection to the end-to-end method has been that it would leak at the mesenteric border. This is because infection here causes the sutures to give way. It can be avoided by dividing, clamping and tying this space and by clamping and tying the mesentery before opening the bowel. Horsley describes and illustrates a method of excising the cecum and ascending colon with end-to-end anastomosis and an attempt at restoration of the ileocecal valve.

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**Studies in the Standardization of the Wassermann Reaction.**—BROWN and KOLMER (*Am. Jour. Syph.*, 1919, iii, 8) say that it is highly important to have all glassware used in the Wassermann reaction (pipette, test-tubes and flasks) chemically clean and free of all traces of acid or alkali by reason of the marked antilytic (anticomplementary) and hemolytic properties of these substances. Amounts of sodium hydroxide as low as 1 c.c. of a 1 to 400 dilution of a  $\frac{1}{2}$  solution in 2 or 3 c.c. of fluid may be anticomplementary while 1 c.c. of a 1 to 100 proves hemolytic; approximately 1 c.c. of a 1 to 500 dilution of  $\frac{1}{2}$  solution of hydrochloric acid is anticomplementary and 1 c.c. of a 1 to 300 dilution is hemolytic. Bichromate cleaning fluid proved anticomplementary in amounts as low as 1 c.c. of a 1 to 900 dilution and hemolytic in 1 c.c. of a 1 to 600 dilution. It is possible that minute traces of acid or alkali in the glassware may be responsible for falsely positive Wassermann reactions with normal serums, large amounts may produce negative Wassermann reactions with syphilitic serums, probably by reason of the direct hemolytic activity of mineral acids and alkalies in amounts greater than sufficient to destroy the complement. The use of one pipette for measuring different serums in conducting the Wassermann reaction introduces the possibility of carrying over sufficient syphilitic serum into a normal serum to produce an erroneous result

unless the pipette is washed between each serum. The use of a separate pipette for each serum is advisable. Test-tubes must be of a size suitable to the technic in order to avoid too high column of fluid in a narrow test-tube which tends to interfere with hemolysis. Physiological saline solution for the Wassermann reaction should be prepared of chemically pure sodium chloride in freshly distilled water in 0.7 to 0.9 per cent.; preferably 0.85 per cent. The kinds of test-tubes and pipettes advised for a standardized Wassermann technic and methods for cleaning and preparing them are described.

**Criteria as to Cure in Syphilis.**—LE COMTE (*Am. Jour. Syph.*, 1919, iii, 106) says that mercury has not been superseded by arsphenamin, and should be used in every case both early and after the more powerful spirocheticide has controlled the acute features of the infection. Fournier required three years' treatment with it; now, in view of the rapidity with which the lesions not affected by mercury alone can be cleared up by combined treatment and the promptness with which relapse can be detected, this period may safely be shortened. It may be held that a fair time would be six months after all symptoms have disappeared, guarding against relapse and resorting to arsphenamin when it occurs. The methods of administration will have to be varied with the peculiarities of the patient. Injections probably act more quickly and certainly, larger doses may be given safely by inunction, while the pain or inconvenience that these methods cause may make it necessary to treat some cases by oral administration. The choice of a salt can be suited by individual selection, the object being to administer as large doses as can be safely borne by the patient. The inference is that in every point except that of length of treatment, Fournier's rules for marriage must be followed; modern diagnosis and treatment gives advantages in detecting and controlling the disease at any time, that enable the physician of today to make concessions that he could not. Summarized criteria for cure today include treatment with arsphenamin and mercury until negative blood findings are secured and treatment with mercury for at least six months after this; observations for eighteen months after this with frequent negative blood examinations followed by negative spinal fluid findings. Any relapse should be considered as a reinfection so far as cure is concerned. Even with this it is scarcely possible to assure the patient that he is cured beyond all doubt; he should be informed of his chances of cure and told to report at yearly intervals, in the absence of symptoms, for further examination.

**Cancer of the Tongue (Bradshaw Lecture).**—POWER (*British Jour. Surg.*, 1919, vi, 336) says that cancer of the tongue has always existed in both men and in animals, the actual cause being as yet unknown. Its rapid increase among men within historical times is the result of two causes, predisposing and exciting. The predisposing cause is the degenerative change taking place as the result of spirochetal infection, the change being accentuated by the lapse of years and by indulgence in alcohol. The form in which the alcohol is taken does not seem to be important; beer, spirits and wine are equally harmful. It is the amount consumed and not the quality which matters. The exciting cause is local infection. The most effective local irritant is tobacco, although

pyorrhea and carious teeth often act as minor exciting causes. The exciting causes may act for a long time, but will not produce cancer, except in the rarest instances, without the long-continued action of the predisposing cause, syphilis. The occasional occurrence of cancer of the tongue in animals and non-syphilized people shows that, as in cancer generally, there is a *tertium quid* as yet undiscovered, which is called for convenience the predisposition to cancer. This predisposition manifests itself in the varying resistance to cancer shown by different persons. Sometimes the course of the disease is rapid and an accidental injury to the tongue is quickly followed by a carcinomatous ulcer; at other times, when every factor seems to be present and the individual ought to have cancer of the tongue, he lives to a good old age and dies of some wholly different disease.

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**A Study of Peripheral Nerve Injuries.**—JOYCE (*British Jour. Surg.*, 1919, vi, 418) presents an extensive and careful study of 150 cases of war injured nerves. He has not seen any case of complete physiological division later than twelve months after injury in which the condition was not a complete anatomical section. On the other hand, many cases with palpable spindles on their nerves have been seen with full and complete recovery. Cone made a series of remarkable experiments, from which he concludes that war injured nerves are ready to unite at both ends of the injury before the end of eight months. Joyce's cases seem to confirm this. Joyce concludes that: In the majority of cases delayed end-to-end union of a divided nerve is successful, and this method of repair is that of choice. There is something to be said for reunion of nerve trunks by suture of bulbs. An appeal to results of cases so treated is the only way of settling this important matter. This is being done. The anatomical continuity of a nerve deserves the greatest respect. Exploration of a physiologically completely divided nerve should be done as soon as the condition of the wound permits. Neurolysis combined with capsulectomy of spindle-shaped neuromata has been followed by recovery in most, and improvement in all, cases in which this has been done. Exsection of a spindle-shaped neuroma is not justified unless failure has resulted from a neurolysis capsulectomy. Nerve transplantations and double lateral implantations of the ulnar into the median in the forearm have been followed with some measure of success, including some recovery of voluntary power in the affected muscles; but recovery is slow and uncertain. Nerve growth takes place from both ends of a divided nerve transplant, but axis-cylinders grow down only from the central end. An autogenous nerve transplant, of smaller size than the nerve into which it is planted, is capable of hypertrophy. Axis-cylinders, judged by Tinel's sign, grow at the average rate of 2 mm. per diem. Perineural scar tissue constricting young axis cylinders is the most important factor in hindering recovery.

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**An Unusual Type of Fracture-Dislocation of the Upper End of the Humerus.**—DAVIES (*British Jour. Surg.*, 1919, vi, 466) reports the case of a Lance Corporal who was thrown from his horse. Roentgen-ray examination showed a subcoracoid dislocation of the head of the humerus, together with a spiral fracture passing downward and inward from the outer part of the head, ending on the inner aspect of the shaft

of the bone just above its center. Under a general anesthetic the dislocation was reduced. Then the fracture was reduced and the arm bandaged to the side of the body. No splint was used. The roentgen rays taken immediately afterward showed the fragments to be in good position and the dislocation satisfactorily reduced. A roentgen ray taken seven weeks after the accident showed union in good position, and the patient left the hospital a few days later with practically normal power of movement in the right shoulder.

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## PEDIATRICS

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UNDER THE CHARGE OF

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**Duodenal Stenosis.**—CAUTLEY (*British Jour. Children's Dis.*, April-June, 1919) reports a case of a child who was brought to him for attacks of fever and vomiting. The first case in the literature was reported by Aubrey. Meckel quoted two instances. Schafer, Rokitansky and Guyot reported cases. Billard mentioned Schafer's case in his book. Hirschsprung reviewed 16 cases, Silverman 24, Gastner 16, Schegel 29, Cordes 57, Kulyer 46, Spriggs 92, Cowell 92. In all, including the case added by this author, about 100 cases have been reported. The most characteristic group of cases includes those in which the defect is in the neighborhood of the papilla of Vater, the point of entrance of the common bile-duct into the duodenum. In another group are placed those of the duodenal-jejunal junction. The first group may be subdivided according to the site of the defect, being above, opposite or below the papilla. Mere narrowing or an annular constriction partially or entirely obliterating the lumen is rare; also the presence of a complete or a perforated diaphragm, due to reduplication of the wall and consisting of the usual coats of the gut and not merely hypertrophied valvulae conniventes is rare. Usually there is an upper segment ending in a cul-de-sac and connected with a lower segment by a short band, a thread-like band or mesentery only. The latter is a rare type in which there is a complete interruption of the gut. In stenosis the intervening portions connecting the upper and the lower portions are of varying lengths and degrees of constriction. Atresia may be erroneously diagnosed as stenosis because of an apparently direct communication between the two segments, the communication taking place indirectly by means of a branch of the duct which opens into the upper segment; a probe can be passed through this and the common duct into the lower segment. Vomiting, with the usual signs of obstruction, is the clinical picture. It may occur even if no food is given by mouth, the stomach becoming distended by normal secretions. Bilious vomiting occurs in about 90 per cent. of the cases if the obstruction is above the entrance of the common duct, and is probably due to an aberrant branch opening into